

Brakes Mechanical Components

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<p>WARNING</p> <p>Friction materials such as brake and clutch linings or brake pads may contain asbestos fibers.</p> <p>Do not create dust by grinding, sanding or by cleaning with compressed air.</p> <p>Avoid breathing asbestos fibers and asbestos dust.</p> <p>Breathing asbestos may result in serious diseases, such as asbestosis or cancer.</p> <p>Breathing asbestos may cause severe injury and death.</p>	<ul style="list-style-type: none">—Brake pedal/Linkage 46.10—Front brake assembly<ul style="list-style-type: none">1980–1985 46.2pads, removing/installing 46.3–46.41986–1987 46.5pads, removing/installing 46.5a—Parking brake 46.11—Rear brake assembly 46.6<ul style="list-style-type: none">shoes 46.7–46.9

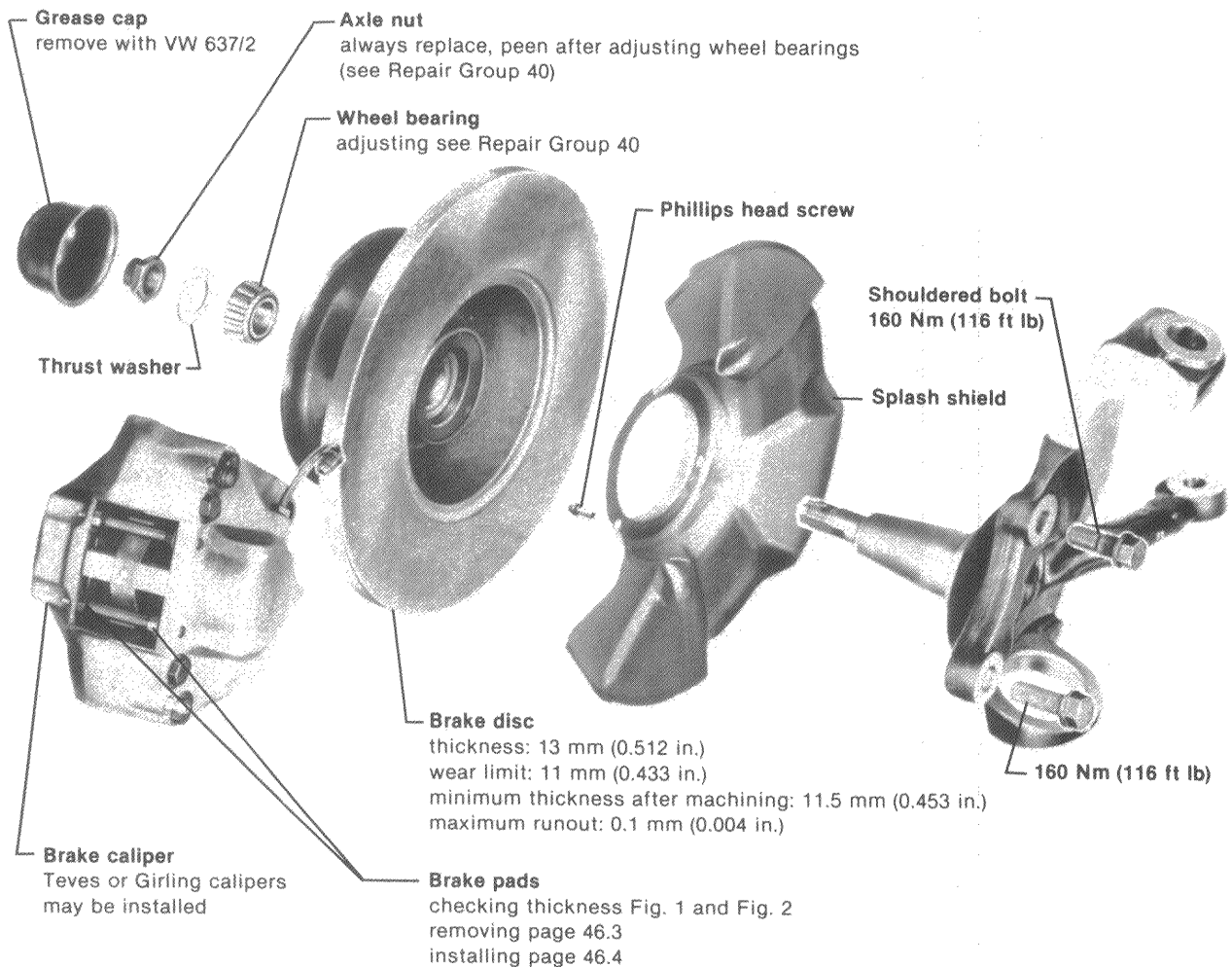
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CAUTION

Always remove brake caliper before removing disc.
Never try to remove disc by using force.
Force may cause caliper mounting frame to crack or break

Note

When removing caliper only, never disconnect brake hose, hang caliper on frame.
Disconnect brake hoses only when repairing brake calipers



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CAUTION

After installing new brake pads, depress brake pedal firmly several times before driving to permit piston and brake pads to adjust to brake disc

When machining brake discs, equal amounts must be taken off each side of disc.
Never machine one side only

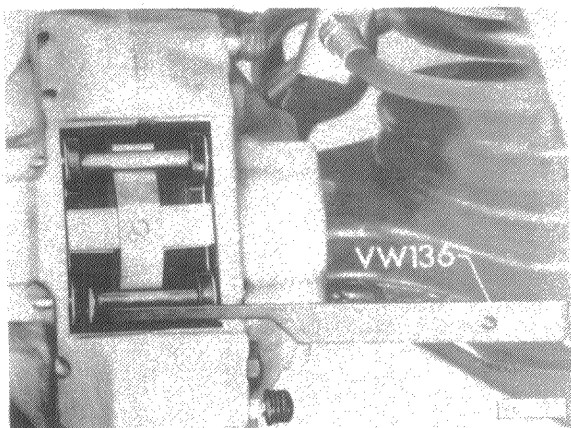


Fig. 1 Brake pad thickness, checking (Teves caliper)

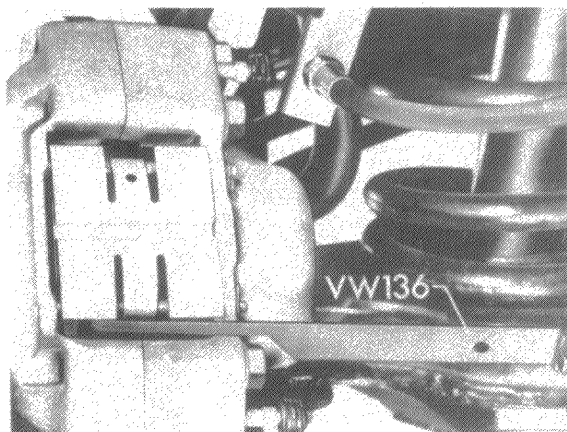


Fig. 2 Brake pad thickness, checking (Girling caliper)

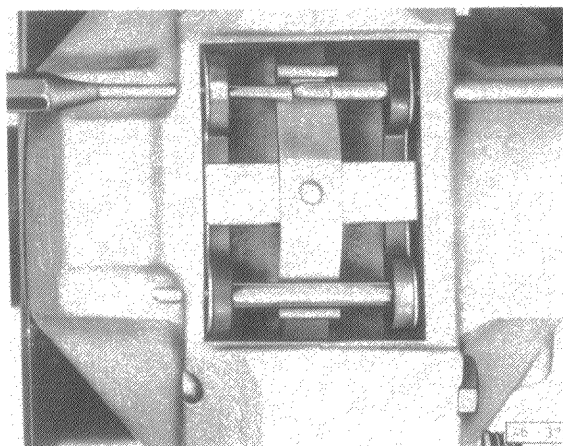
- with wheel mounted, slide gauge from inside between rim and brake caliper
- try to insert gauge into gap at lower retaining pin, between spreader spring and brake pad backing plate
 - if gauge cannot be inserted, brake pads are worn to wear limit of 2 mm (0.080 in.) and must be replaced

CAUTION

Always replace all pads on one axle and use same manufacturer of linings

Brake pads, removing

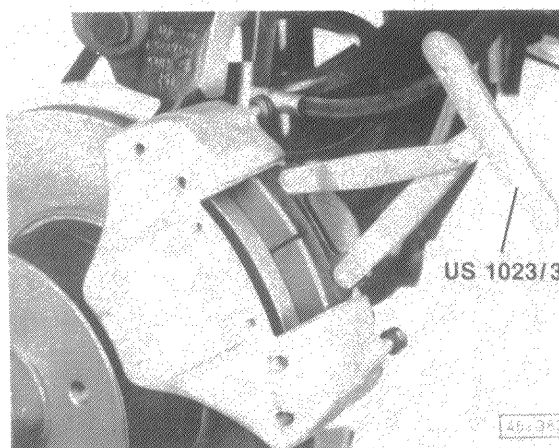
Work sequence



— drive out brake pad retaining pins

Note

On Girling calipers, remove circlips first



— pull out brake pads

CAUTION

When re-using brake pads, mark pads to prevent changing inside to outside or from one caliper to another. Mixed pads can cause uneven braking

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Brake pads, installing

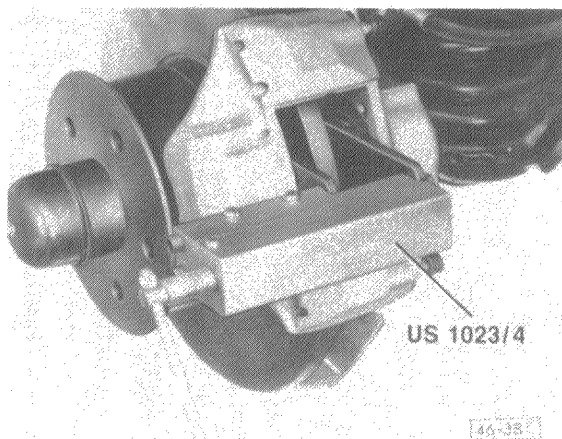
Work sequence

WARNING

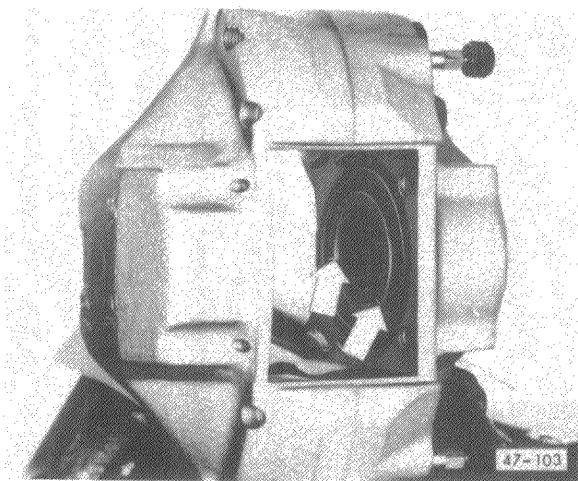
Brake fluid is poisonous.
Do not siphon by mouth

CAUTION

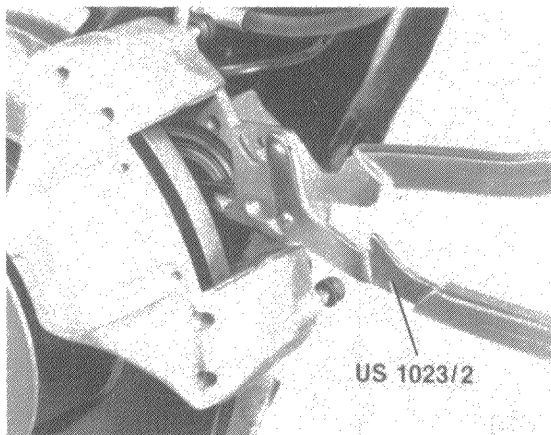
When piston is pushed into caliper, brake fluid is pushed into reservoir. To prevent overflowing, siphon some fluid out with an appliance which is used for this purpose only. Brake fluid will damage paint



- press piston into caliper with tool
- clean brake pad contact surfaces in caliper



- check position of piston (Teves caliper only)
 - recess in piston (arrows) must face bottom.
- Lugs on noise damping plate engage in recess

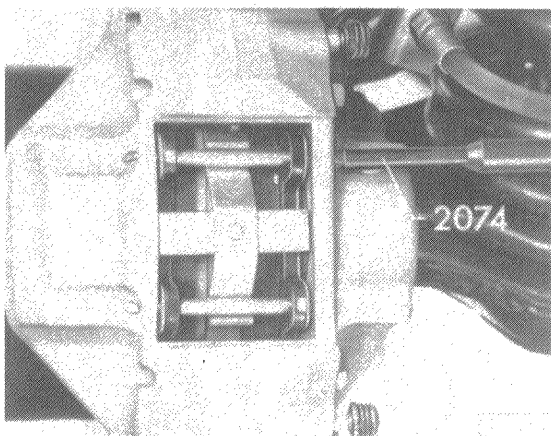


- if necessary, correct position of piston using pliers US 1023/2

Note

Girling calipers have arrows on noise damping plates. Arrows must point up

- install noise damping plates, brake pads and spreader springs



- install retaining pins (on Girling calipers install new circlips on retaining pins)

CAUTION

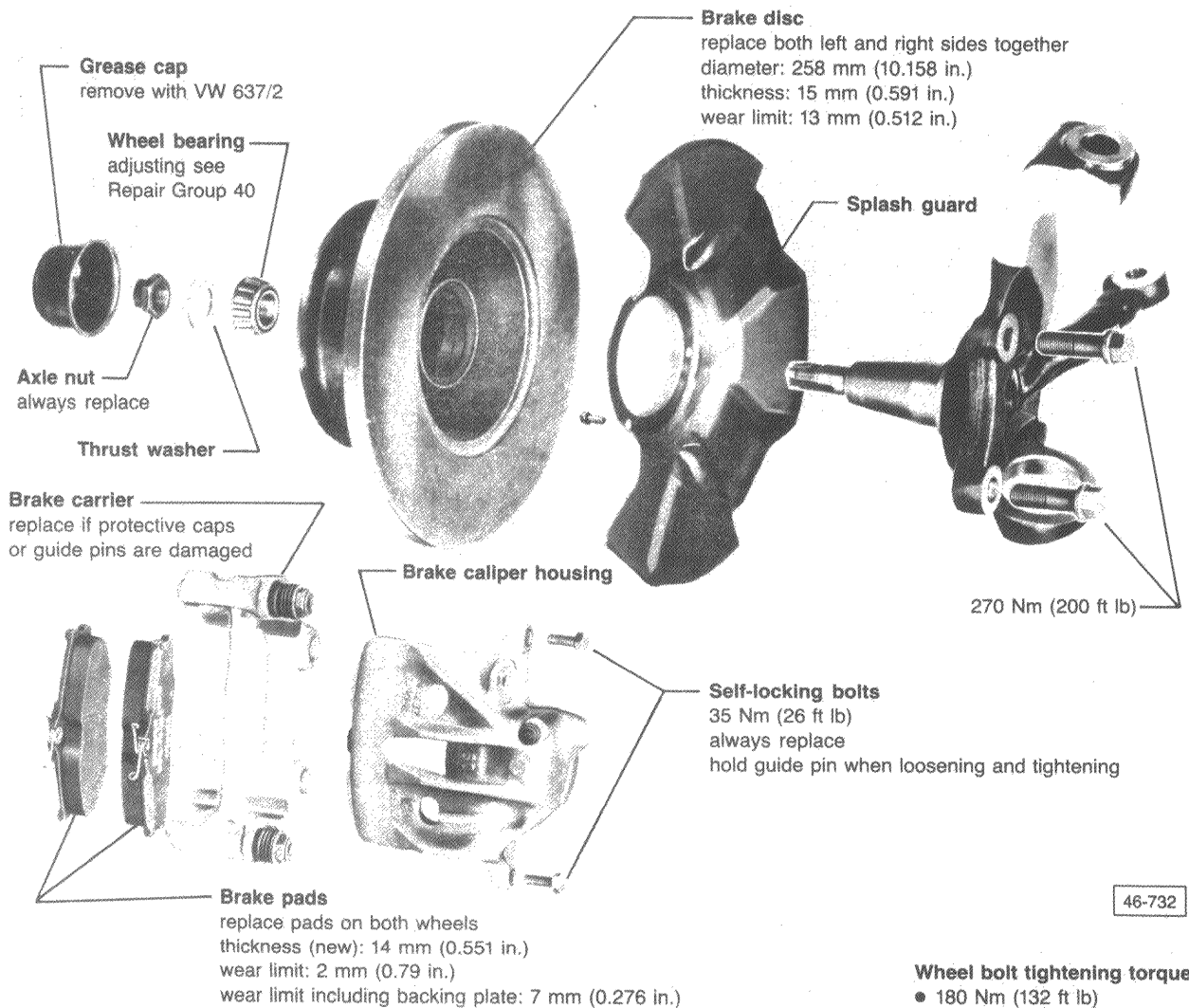
After installing brake pads, depress brake pedal firmly several times before driving to permit pistons and brake pads to adjust to brake disc

Note

If brake hose brackets were removed, reinstall with clearance of 25 mm (1 in.) between hose and tire.

Check clearance by turning wheel from left to right.

Correct clearance by bending bracket



CAUTION

After installing new brake pads, depress brake pedal firmly several times before driving to permit piston and brake pads to adjust to brake disc.

When machining brake discs, equal amounts must be taken off each side of disc.

Never machine one side only.

Always remove brake caliper before removing disc.

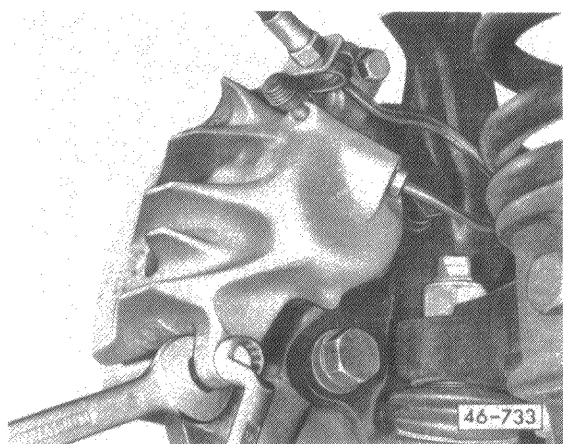
When removing caliper only, never disconnect brake hose, hang caliper on frame.

Disconnect brake hoses only when repairing brake calipers.

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Brake pads, removing

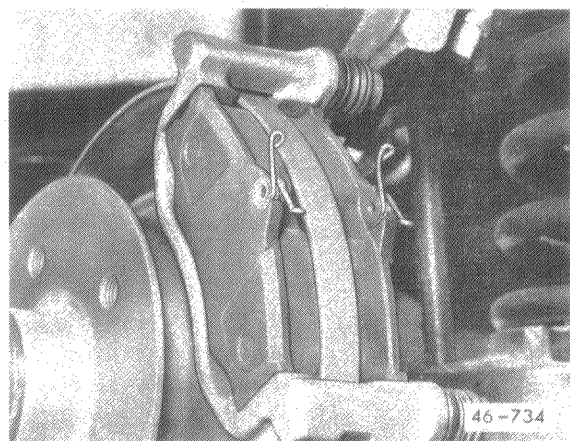
Work sequence



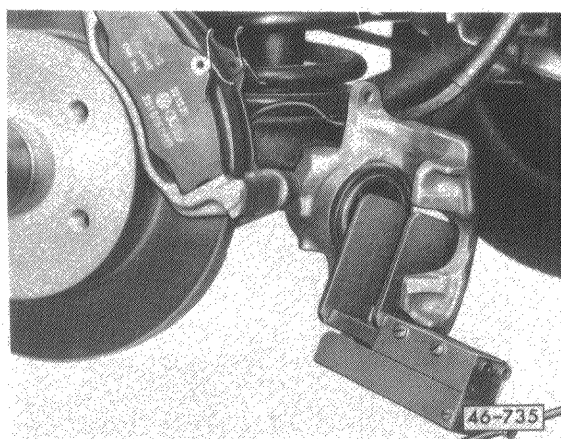
- remove lower fastening bolt for brake caliper housing while holding guide pin

CAUTION

When re-using brake pads, mark pads to prevent changing inside to outside or from one caliper to another. Mixed pads can cause uneven braking



- swing brake caliper housing upward and remove brake pads



- press piston back in brake caliper housing

CAUTION

Always remove some brake fluid from reservoir before installing new brake pads. When caliper piston is pushed back, fluid is forced out of caliper and into reservoir. After pads are installed, refill reservoir only to MAX mark

Brake pads, installing

Work sequence

- insert brake pads into carrier
- swing caliper housing down and tighten bolts to 35 Nm (26 ft lb)

Note

New self-locking bolts **MUST** be used when refastening brake caliper housing.

- depress brake pedal firmly several times before driving

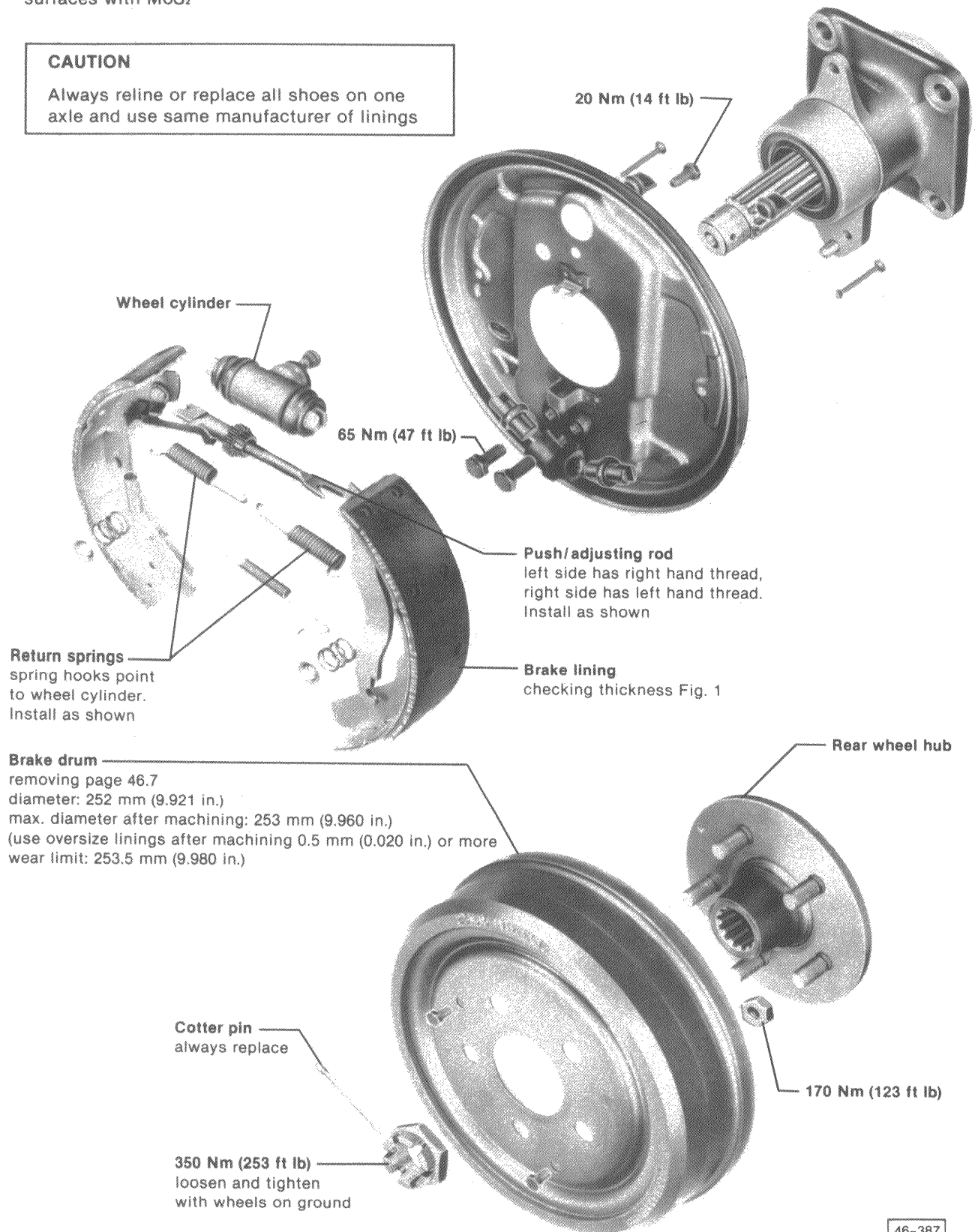
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Note

Lightly lubricate all moving parts and contact surfaces with MoS₂.

CAUTION

Always reline or replace all shoes on one axle and use same manufacturer of linings



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46.6 Rear brake assembly

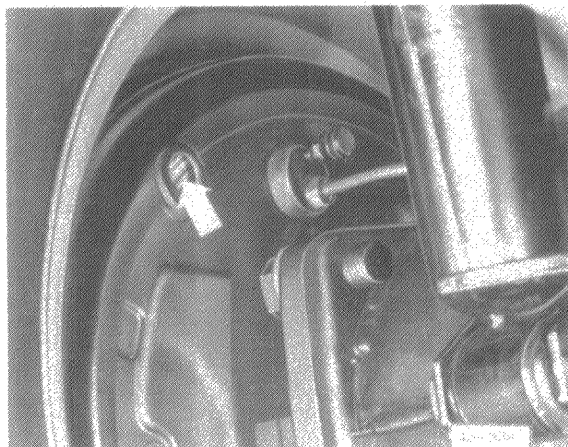
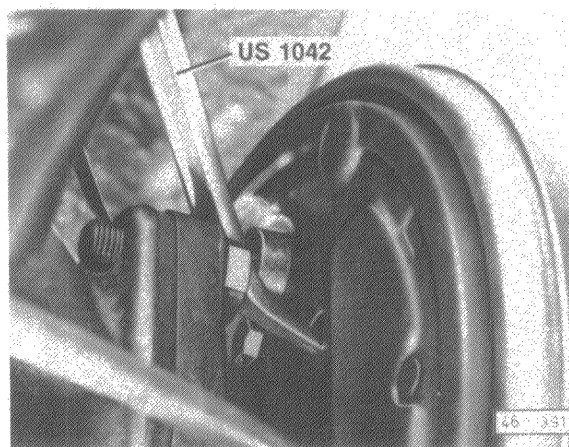


Fig. 1 Brake linings, checking (arrow)

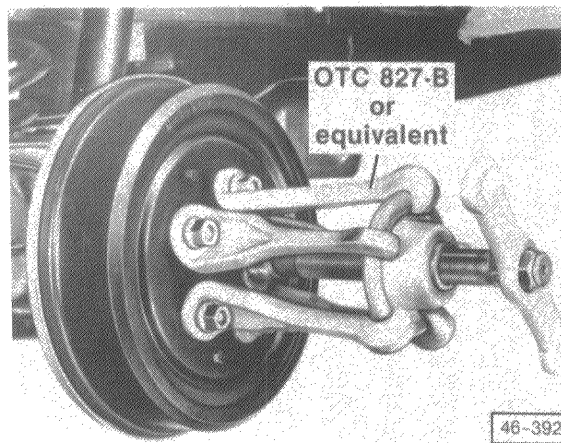
- standard lining thickness:
6.0 mm (0.236 in.)
- oversize lining thickness:
6.5 mm (0.256 in.)
- wear limit:
2.5 mm (0.098 in.)

Brake drum, removing

Work sequence



- release parking brake cables by loosening nuts at parking brake equalizer
- back off adjuster through hole in backing plate



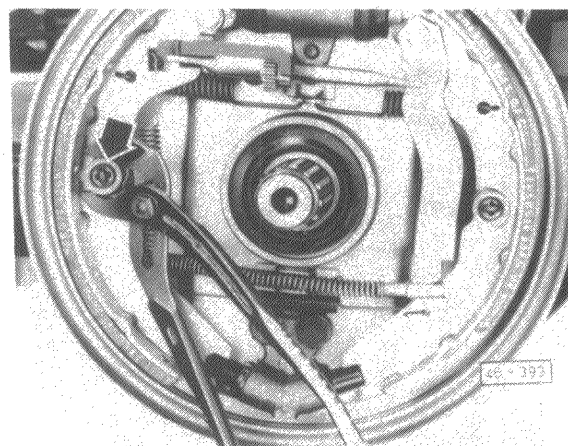
— pull off drum and hub

Note

Drum must rotate freely when being pulled off

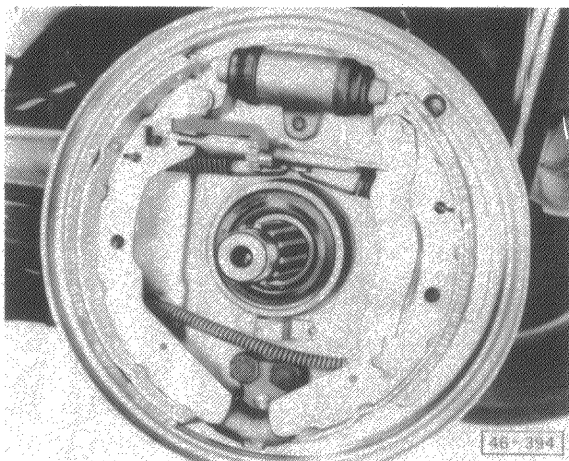
Brake shoes, removing

Work sequence

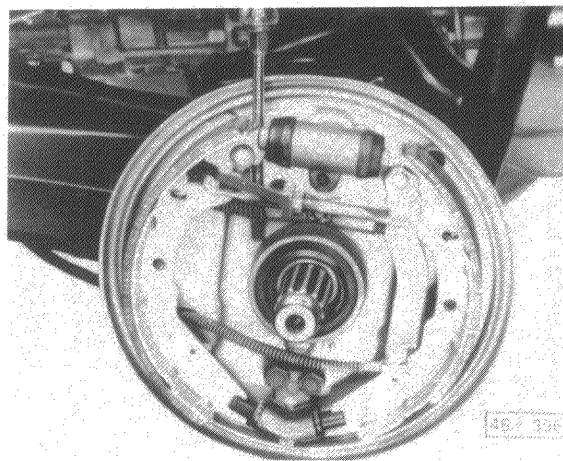


- remove spring retainers and hold down springs (arrow)
- unhook parking brake cable at lever on brake shoe
- remove lower return spring
- remove adjuster spring
- go to next page

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- move brake shoes out of lower support
- unhook return springs
- remove brake shoes together with push/adjusting rod



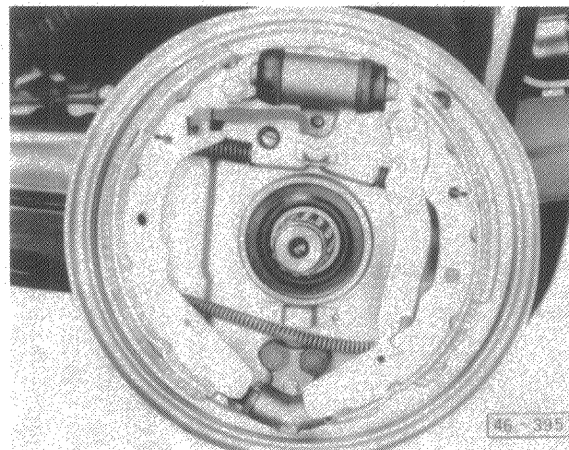
- pry brake shoe away from wheel cylinder with screwdriver and install push/adjusting rod
- install hold down springs and retainers

CAUTION

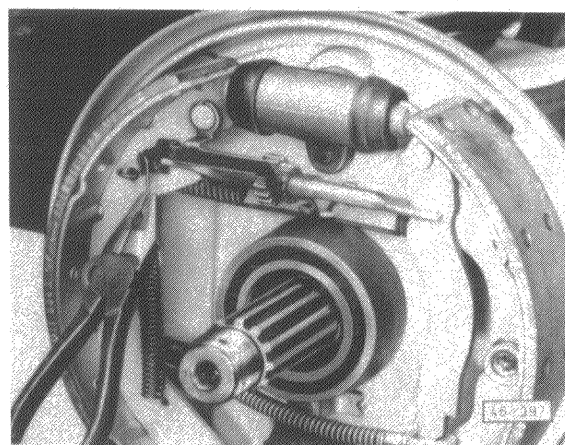
Do not press pistons out of wheel cylinder

Brake shoes, installing

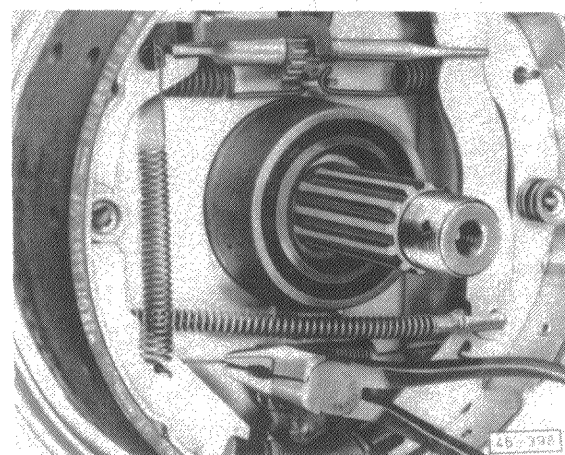
Work sequence



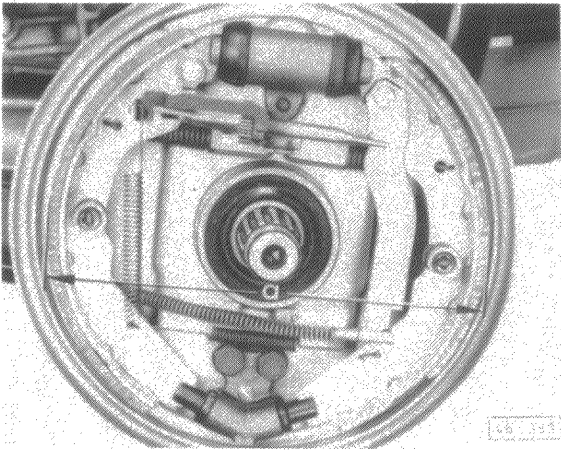
- lubricate thread of push/adjusting rod and check that adjuster moves freely
- install brake shoes together with return springs
- insert brake shoes into lower supports



- install adjuster spring
- attach parking brake cable to lever on brake shoe



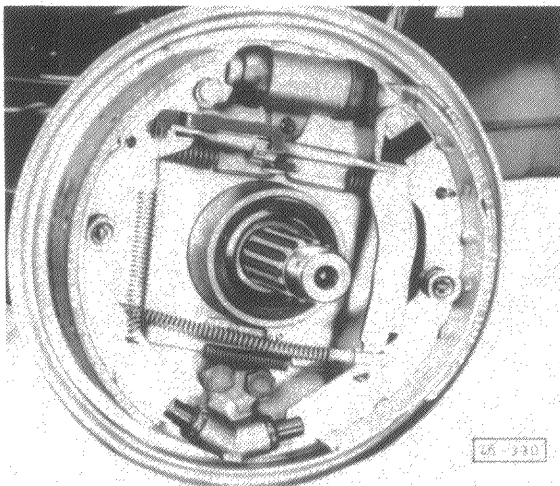
- install lower return spring



- make basic adjustment of brake shoes by turning adjuster until measurement **a** is obtained

Example

brake drum inner diameter:	252.2 mm (9.929 in.)
minus clearance:	1.5 mm (0.059 in.)
measurement a =	250.7 mm (9.870 in.)



- adjust parking brake cables at parking brake equalizer (see page 46.11)
 - there must be no play between lever on brake shoe and push/adjusting rod
- install brake drum
- tighten slotted nut to 350 Nm (253 ft lb) and turn further until new cotter pin fits into hole in axle shaft

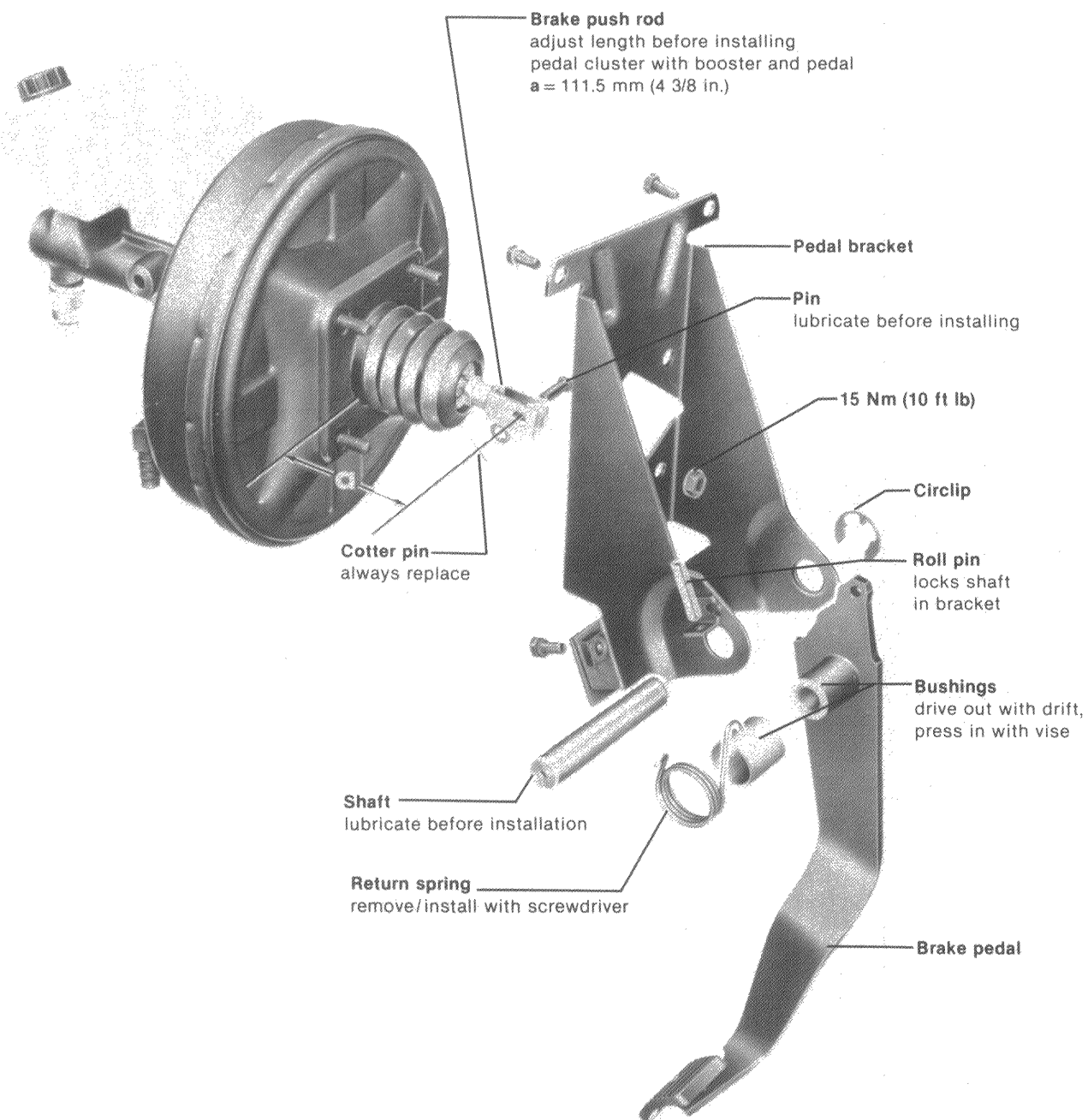
CAUTION

Depress brake pedal several times before driving so that rear brakes self adjust

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Note

Instrument panel must be removed before booster and bracket with pedal connected, can be taken out



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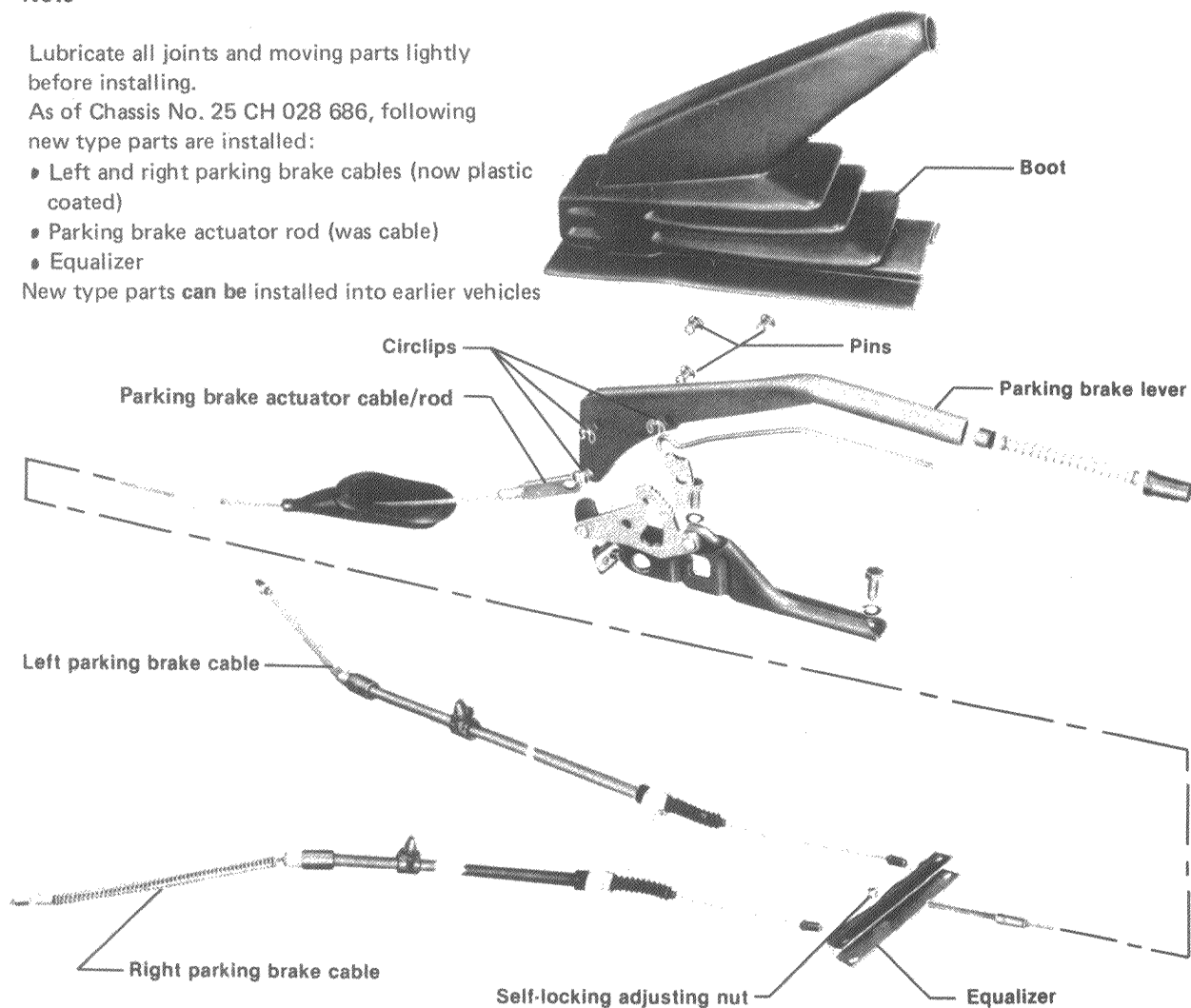
Note

Lubricate all joints and moving parts lightly before installing.

As of Chassis No. 25 CH 028 686, following new type parts are installed:

- Left and right parking brake cables (now plastic coated)
- Parking brake actuator rod (was cable)
- Equalizer

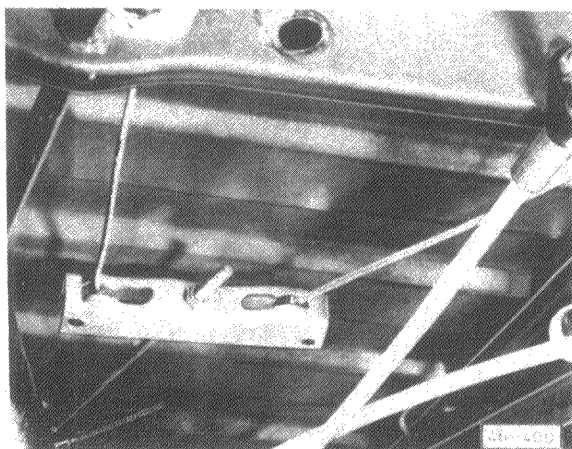
New type parts can be installed into earlier vehicles



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Parking brake, adjusting

Work sequence



CAUTION

Rear brakes must be properly adjusted before adjusting parking brake

- release parking brake
- tighten adjusting nut (self locking) until there is no noticeable play at brake components
 - check by pulling slightly on brake cable housings
- apply and release parking brake several times
- check proper adjustment of parking brake
 - rear wheels can not be turned by hand when brake lever is pulled 2-4 notches
 - rear wheels must rotate freely when parking brake is released